

ABSTRACT OF THE DISCLOSURE

A hetero-junction bipolar transistor that satisfies high resistance required to avoid a potential breakdown includes: an n-type sub-collector layer 110 that is made of GaAs; an n-type first collector 121 that is made of a semiconductor material with a smaller avalanche coefficient than that of the sub-collector 110 and is formed on the sub-collector layer 110; a second collector layer 132 that is made of n-type or i-type GaAs with lower dopant concentration than that of the sub-collector layer 110 and is formed on the first collector layer 121; a p-type base layer 133 that is made of GaAs and is formed on the second collector layer 132; and emitter layer 134 that is made of a semiconductor material with a larger band gap than that of the base layer 133 and is formed on the base layer 133.